Reasoning and Problem Solving
Step 9: Estimate Answers

National Curriculum Objectives:

Mathematics Year 4: (4C2) Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate
Mathematics Year 4: (4C3) Estimate and use inverse operations to check answers to a calculation

Differentiation:

Questions 1, 4 and 7 (Reasoning)
Developing Identify which calculation is the odd one out by rounding to the nearest 10 or 100. Numbers up to 1,000. Place value counters as pictorial support.
Expected Identify which calculation is the odd one out by rounding to the nearest 10, 100 or 1,000. Numbers up to 10,000.
Greater Depth Identify which calculation is the odd one out by rounding to the nearest 10, 100 or 1,000. Numbers up to 10,000 and written in words.

Questions 2, 5 and 8 (Reasoning)
Developing Compare estimates and explain which is the most sensible. Includes numbers up to 1,000. Place value counters as pictorial support.
Expected Compare estimates and explain which is the most sensible. Includes numbers up to 10,000. Using numerals only.
Greater Depth Compare estimates and explain which is the most sensible. Includes numbers up to 10,000. Using a mixture of numerals and words with some unconventional partitioning.

Questions 3, 6 and 9 (Problem Solving)
Developing Identify the missing number in a calculation by rounding to the nearest 10. Numbers to 1,000. Place value counters as pictorial support.
Expected Identify the missing number in a calculation by rounding to the nearest 10 and nearest 100. Numbers to 10,000.
Greater Depth Identify the missing number in a calculation by rounding to the nearest 100 and 1,000. Numbers to 10,000. Using a mixture of numerals and words with some unconventional partitioning.

More Year 4 Addition and Subtraction resources.

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Reasoning and Problem Solving – Estimate Answers – Teaching Information

Estimate Answers

1a. Which calculation is the odd one out?

A.
H	T	O

+
H	T	O

B.
H	T	O

+
H	T	O

C.
H	T	O

+
H	T	O

Explain how you know.

⭐D

R

2a. Evie and Dominic are estimating the answer to 308 + 188
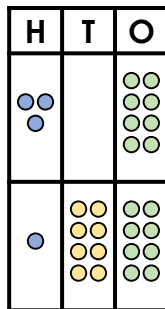
Evie: It's about 500

Dominic: It's about 400

H	T	O

+
H	T	O

Who makes the most sensible estimate? Explain your choice.

⭐D

R

3a. The total number of residents in two blocks of flats is 939. Georgia is calculating the amount of residents in Block B.

Block A has 823 residents

H	T	O

Estimate the number of residents in Block B by rounding to the nearest 10

⭐D

PS

Estimate Answers

1b. Which calculation is the odd one out?

A.
H	T	O

+
H	T	O

B.
H	T	O

+
H	T	O

C.
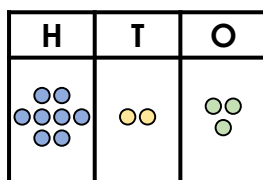| H	T	O

+
H	T	O

Explain how you know.

⭐D

R

2b. Max and Heena are estimating the answer to 253 + 346

Max: It's about 500

Heena: It's about 600

H	T	O

+
H	T	O

Who makes the most sensible estimate? Explain your choice.

⭐D

R

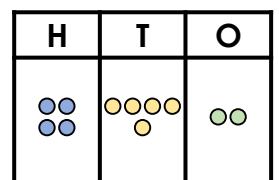**3b.** The total number of people in two hotels is 786. Tommy is calculating the amount of people in Hotel B.

Hotel A has 452 residents

H	T	O

Estimate the missing number of people in Hotel B by rounding to the nearest 10

⭐D

PS

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Reasoning and Problem Solving – Estimate Answers – Year 4 Developing

Estimate Answers

4a. Which calculation is the odd one out.

A. $4,293 + 3,526$

B. $2,814 + 5,005$

C. $6,325 + 1,496$

Explain how you know.

☆ E

R

Estimate Answers

4b. Which calculation is the odd one out.

A. $6,893 − 3,539$

B. $4,189 − 824$

C. $8,625 − 5,275$

Explain how you know.

☆ E

R

5a. Theo and Jenny are estimating the answer to 3,678 + 1,982

It's about 4,000

Theo

It's about 5,700

Jenny

Who makes the most sensible estimate? Explain your choice.

☆ E

R

5b. Beth and Adam are estimating the answer to 9,354 − 5,877

It's about 4,000

Beth

It's about 3,500

Adam

Who makes the most sensible estimate? Explain your choice.

☆ E

R

6a. The total workers in two offices is 9,283. Molly is calculating the amount of workers in Office B.

Office A has 6,139 workers.

Estimate the number of workers in Office B by rounding to the nearest 10 and the nearest 100

☆ E

PS

6b. The total of patients in a hospital is 8,191. Ted is calculating the amount of patients in Hospital B.

Hospital A has 4,973 workers.

Estimate the numbers of patients in Hospital B by rounding to the nearest 10 and the nearest 100

☆ E

PS

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Reasoning and Problem Solving – Estimate Answers – Year 4 Expected

Estimate Answers

7a. Which calculation is the odd one out.

A. six thousand, eight hundred and seventy-one add one thousand, five hundred and ninety-three

B. six thousand, three hundred and twenty-nine add two thousand, one hundred and thirty-three

C. four thousand, nine hundred and forty-two add three-thousand five hundred and twenty-six

Explain how you know.

R

Estimate Answers

7b. Which calculation is the odd one out.

A. one thousand, eight hundred and seventy-five add four thousand, six hundred and forty-seven

B. three thousand, two hundred and twelve add three thousand, three hundred and nineteen

C. four thousand, four hundred and forty-four add two thousand one hundred and ninety-five

Explain how you know.

R

8a. Charlie and Freya are estimating the answer to five thousand, eight hundred add one thousand, two hundred and thirty-four

Charlie: It's similar to 6,000 + 1,000

Freya: It's similar to 5,000 + 1,200

Who makes the most sensible estimate? Explain your choice.

R

8b. James and Morgan are estimating the answer to four thousand, eight hundred and nine add three thousand, two hundred and seventy-six
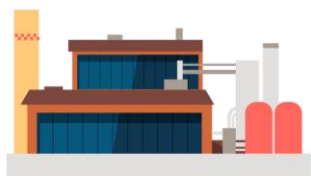
James: It's similar to 5,000 + 3,000

Morgan: It's similar to 6,000 + 3,400

Who makes the most sensible estimate? Explain your choice.

R

9a. The total workers in two factories is nine thousand, two hundred and seventy-five. Paul is calculating the amount of workers in Factory B.

Workers in Factory A

4,000 operators
1,800 mechanics
110 managers
9 directors

Estimate the number of workers in Factory B by rounding to the nearest 100 and the nearest 1,000

PS

9b. The total workers in two power plants is six thousand, one hundred and ninety-three. Sam is calculating the amount of workers in Power Plant B.

Workers in Power Plant A

2,000 technicians
1,700 engineers
150 inspectors
3 managers

Estimate the number of workers in Power Plant B by rounding to the nearest 100 and the nearest 1,000

PS

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Reasoning and Problem Solving – Estimate Answers – Year 4 Greater Depth

Reasoning and Problem Solving
Estimate Answers

Developing

1a. Various answers, for example: B is the odd one out when rounded to the nearest 10 as it totals 980, A and C total 880; B is also the odd one out when rounded to the nearest 100 as it totals 1,000, A and C total 900.

2a. Evie because 308 + 188 when rounded to the nearest 10 is 310 + 190 = 500 and when round to the nearest 100 is 300 + 200 = 500

3a. 120

Expected

4a. Various answers, for example: C is the odd one out when rounded to the nearest 1,000 as it totals 7,000, A and B total 8,000; C is also the odd one out when rounded to the nearest 10 as it totals 7,830, A and B total 7,820

5a. Jenny because 3,678 + 1,982 when rounded to the nearest 100 is 3,700 + 2,000 = 5,700

6a. 3,140 (rounded to the nearest 10); 3,200 (when rounded to the nearest 100)

Greater Depth

7a. Various answers, for example: B is the odd one out when rounded to the nearest 1,000 as it totals 8,000, A and C total 9,000; A is the odd one out when rounded to the nearest 100 as it totals 8,500, B and C total 8,400; C is the odd one out when rounded to the nearest 10 as it totals 8,470, A and B total 8,460.

8a. Charlie because 5,800 + 1,234 when rounded to the nearest 1,000 is 6,000 + 1,000 = 7,000

9a. 3,000 (nearest 1,000); 3,400 (nearest 100)

Reasoning and Problem Solving
Estimate Answers

Developing

1b. C is the odd one out when rounded to the nearest 10 as it totals 660, A and C total 650.

2b. Heena because 253 + 346 when rounded to the nearest 10 is 250 + 350 = 600 and when rounded to the nearest 100 is 300 + 300 = 600

3b. 340

Expected

4b. Various answers, for example: C is the odd one out when rounded to the nearest 1,000 as it totals 4,000, A and B total 3,000; C is also the odd one out when rounded to the nearest 100 as it totals 3,300, A and B total 3,400; B is the odd one out when rounded to the nearest 10 as it totals 3,370, A and B total 3,350.

5b. Adam because 9,354 – 5,877 when rounded to the nearest 100 is 9,400 – 5,900 = 3,500

6b. 3,220 (when rounded to the nearest 10); 3,200 (when rounded to the nearest 100)

Greater Depth

7b. Various answers, for example: A is the odd one out when rounded to the nearest 1,000 as it totals 7,000, B and C total 6,000; C is the odd one out when rounded to the nearest 100 as it totals 6,600, A and B total 6,500; C is also the odd one out when rounded to the nearest 10 as it totals 6,640, A and B total 6,530.

8b. James because 4,809 + 3,276 when rounded to the nearest 1,000 is 5,000 + 3,000 = 8,000

9b. 2,000 (nearest 1,000); 2,300 (nearest 100)

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